

Figure 1

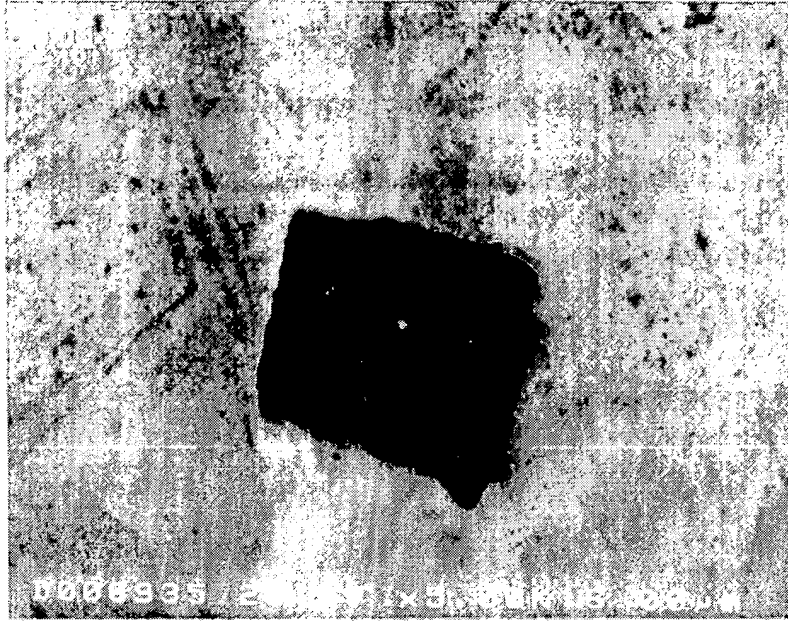


Figure 2



Figure 3

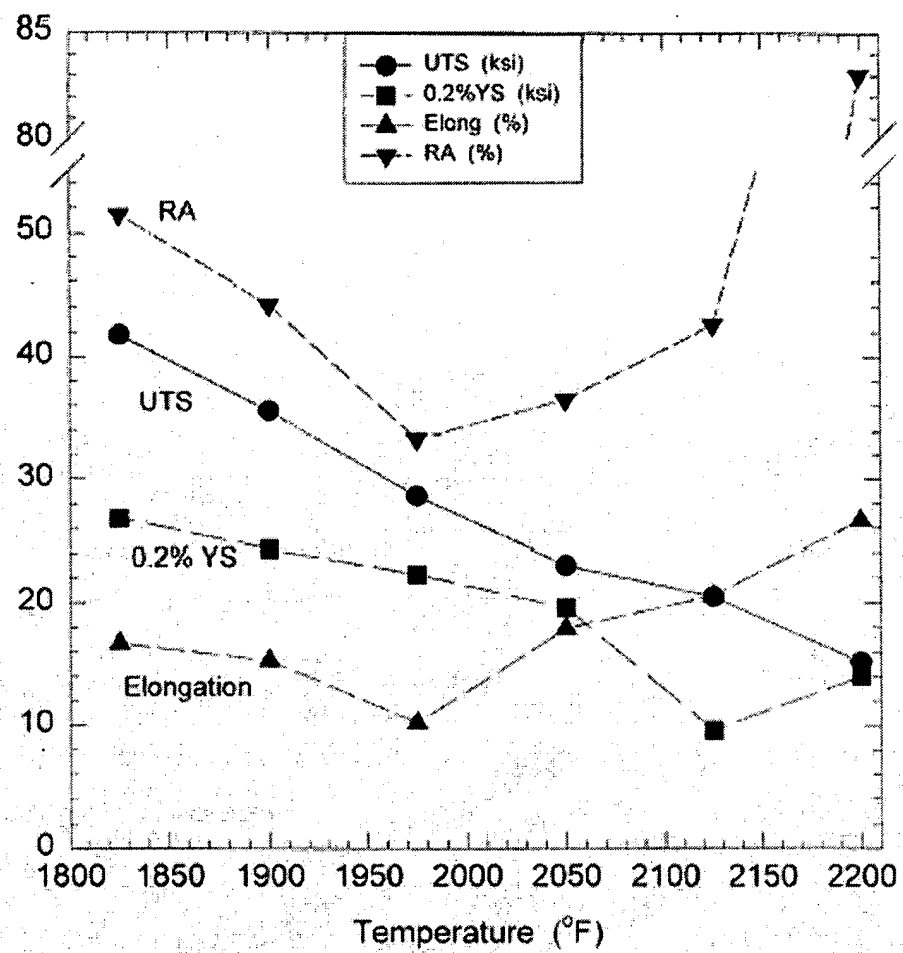


Figure 4

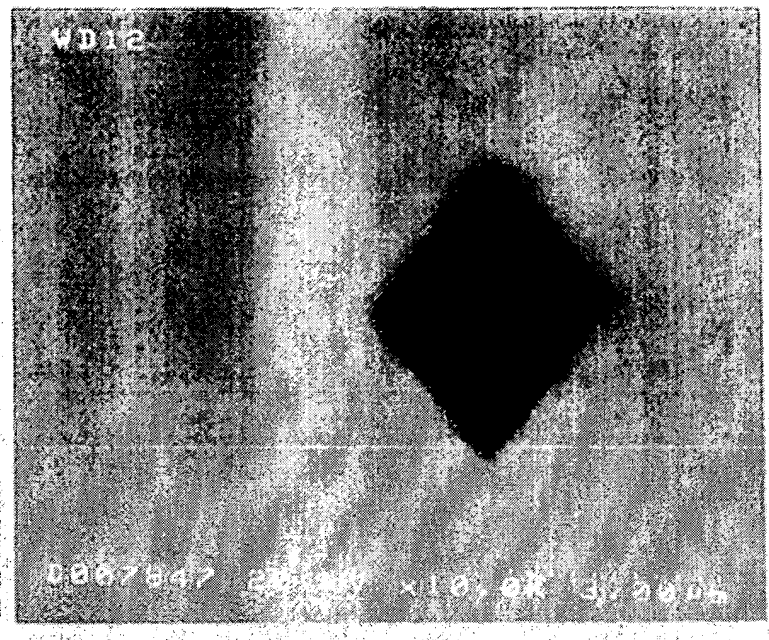


Figure 5



Figure 6

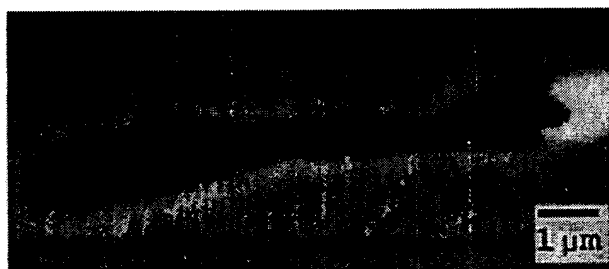


Figure 7

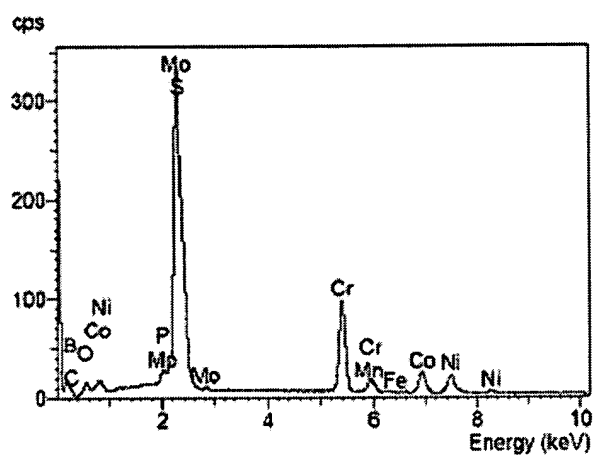


Figure 8

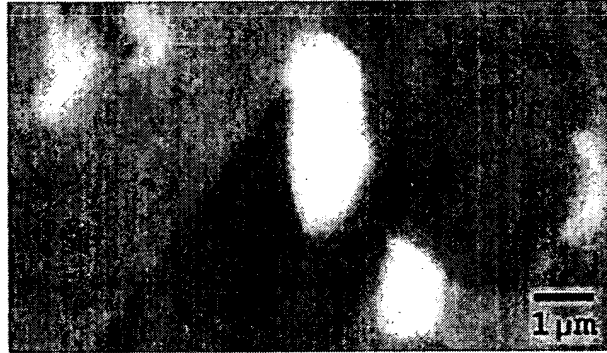


Figure 9

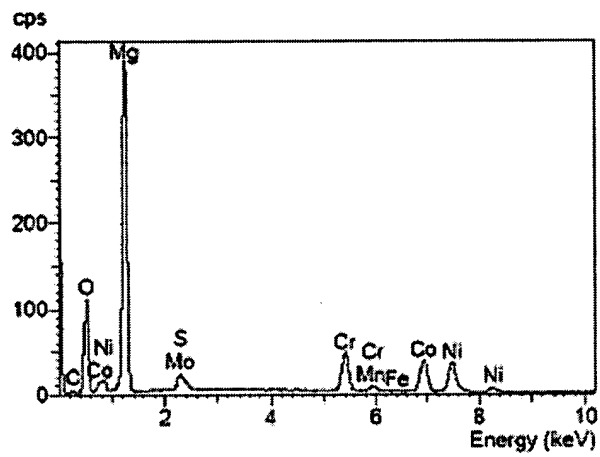


Figure 10



Figure 11

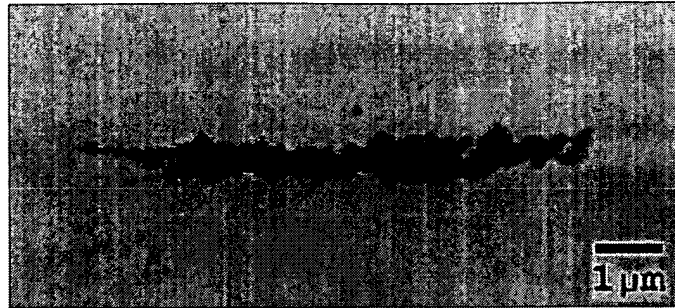


Figure 12

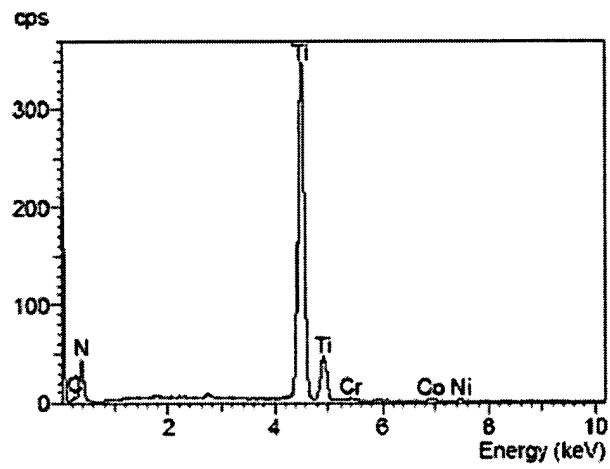


Figure 13

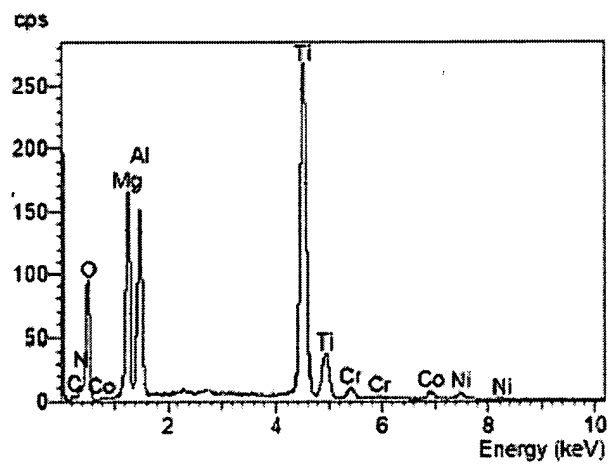


Figure 14



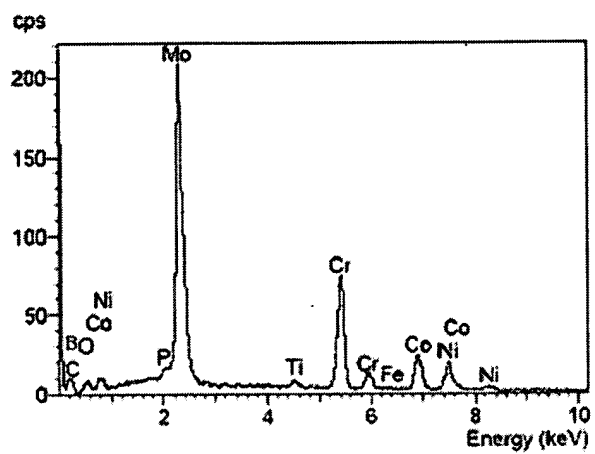


Figure 15

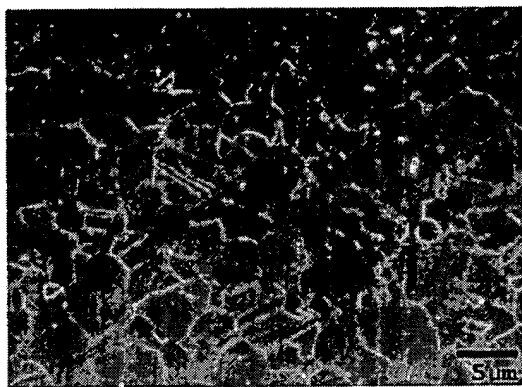


Figure 16



Figure 17



Figure 18

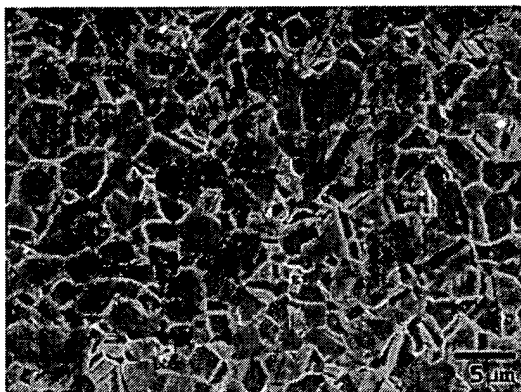


Figure 19

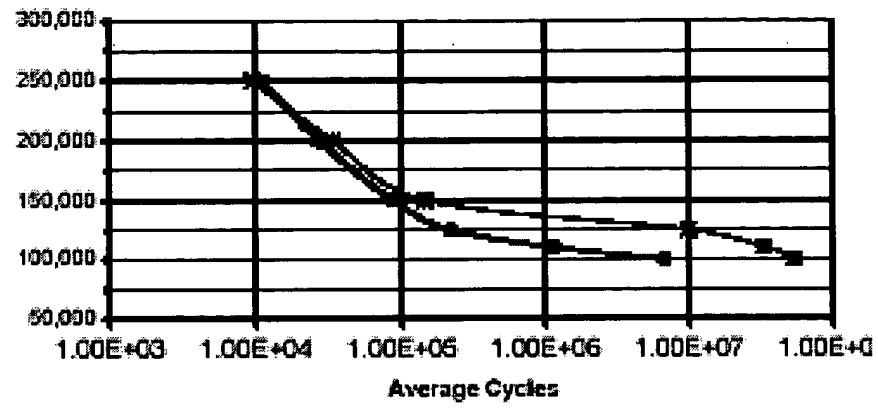


Figure 20

### Heat WF64 - LLA Mg Deoxidation

Size	Composition
0.5 $\mu\text{m}$	Mg oxide
0.5 x 1.2 $\mu\text{m}$	Mg oxide
0.8 $\mu\text{m}$	Mg oxide
0.6 $\mu\text{m}$	Mg oxide
11 x 0.8 $\mu\text{m}$	Mg oxide
12 x 0.8 $\mu\text{m}$	Mg/Al oxide
1 $\mu\text{m}$	Mg oxide
1.6 $\mu\text{m}$	Mg oxide
1.2 $\mu\text{m}$	Mg oxide
1.6 $\mu\text{m}$	Mg oxide
0.8 $\mu\text{m}$	Al oxide
1 $\mu\text{m}$	Mg oxide
9 x 0.6 $\mu\text{m}$	Al/Si oxide

### ASTM E45 - Method D (worst Field)

Globular Type D Thin = 0.5  
All others = 0

Grain Size - ASTM 10

### Heat WF66 - LLA Ce Deoxidation

Size	Composition
2.4 x 0.9 $\mu\text{m}$	Ce oxide
2.2 $\mu\text{m}$	Ce oxide
1 $\mu\text{m}$	Ce oxide
1 $\mu\text{m}$	Ce oxide
1 $\mu\text{m}$	Ce oxide
1.5 $\mu\text{m}$	Ce oxide
4 x 2 $\mu\text{m}$	Ce oxide
1.6 $\mu\text{m}$	Ce oxide
3.2 $\mu\text{m}$	Ce oxide
15 x 2 $\mu\text{m}$	Ce oxide
0.7 $\mu\text{m}$	Ce oxide
5.4 x 2.4 $\mu\text{m}$	Ce oxide
4.3 x 0.4 $\mu\text{m}$	Ce oxide

### ASTM E45 - Method D (worst Field)

Globular Type D Thin = 1.0  
All others = 0

Grain Size - ASTM 10

### Heat WF65 - LLA Ca Deoxidation

Size	Composition
0.8 $\mu\text{m}$	Al oxide
0.8 $\mu\text{m}$	Al oxide
1.8 $\mu\text{m}$	Al oxide
2 $\mu\text{m}$	Al oxide
1.7 $\mu\text{m}$	Al oxide
1.5 $\mu\text{m}$	Al oxide
2 $\mu\text{m}$	Al oxide
1.2 $\mu\text{m}$	Al oxide
1 $\mu\text{m}$	Al oxide
1.2 $\mu\text{m}$	Ca oxide
12 x 1 $\mu\text{m}$	Al oxide
90 $\mu\text{m}$	Al/Ca oxide

stringer = total length of 90  $\mu\text{m}$

### ASTM E45 - Method D (worst Field)

Globular Type D Thin = 0.5  
Sulfide Type A Thin = 0.5  
All others = 0

Grain Size - ASTM 10

**Figure 20**